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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/797,818

03/10/2004

Wen Lin Lo

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EXAMINER

ARNOLD, ERNST V

ART UNIT

PAPER NUMBER

1616

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/797,818	<b>Applicant(s)</b> LO, WEN LIN	
	<b>Examiner</b> ERNST V. ARNOLD	<b>Art Unit</b> 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1-6 and 11-15 have been cancelled. Claims 7-10 are under examination. Applicant's amendment has necessitated a new ground of rejection. Accordingly, this Action is FINAL.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7-10 remain/are rejected under 35 U.S.C. 103(a) as being unpatentable over Burrell et al. (US 5,454,886) in view of Kelly et al. (Vacuum 2000, 56, 159-172).

Applicant claims a method for making an anti-microbial sanitary ware.

### **Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

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Burrell et al. teach methods of forming an anti-microbial material containing one or more anti-microbial metals coated on the substrate wherein the antimicrobial metal is silver, copper, zinc or alloys thereof, the method is magnetron sputtering, and a different material is co-, sequentially or reactively deposited to produce a composite where the different material is a nitride or carbide of an inert biocompatible metal such as titanium (Claims 1, 2, 4, 6 and 8 and column 9, line 63-column 10, line16). The Examiner interprets co-deposited to mean simultaneously deposited. Burrell et al. disclose that suitable substrates include steel, aluminum, latex, nylon, silicone, polyester, glass, ceramic, paper, cloth and other plastics and rubbers thus reading on instant claim 10 (Column 7, line 65-column 8, line1). Burrell et al. provide some guidance on the size of silver particles deposited onto a silicon wafer using RF magnetron sputtering which resulted in a grain size of 60-150 nm (Column 12, example 12, lines 14-43). Burrell et al. teach observed nanometer scale changes in surface morphology and topography are indication of atomic disorder in the silver metal created by mismatched atoms (Column 12, lines 44-49). In the absence of results to the contrary, it is the Examiner's position that the method of Burrell et al. would form metal particles of the second metal, silver, having a size of less than 100 nm and having said metal particles, silver, dispersed in the protective layer.

Burrell et al. teach in one example a Bias of -100 V (column 16, line 9).

Kelly et al. teach closed field unbalanced magnetron sputtering also known as CFUBMS for the deposition of high quality well-adhered films (Abstract; Figures 1 and 3; and pages 161-166).

**Ascertainment of the difference between the prior art and the claims**

**(MPEP 2141.02)**

1. The difference between the instant application and that of Burrell et al. is that Burrell et al. do not expressly teach a method for making an anti-microbial sanitary ware comprising placing a substrate in a sputtering chamber; simultaneously sputtering a first metal target of a first metal and a second metal target of a second metal through closed-field unbalanced magnetron sputtering techniques; a negative biased voltage of greater than -80 V is applied to the substrate; reacting the first metal into a metal compound and subsequently depositing said metal compound on the substrate thereby forming a protective layer; and generating metal particles of the second metal having a size of less than 100 nm and dispersing said metal particles in the protective layer wherein the metal compound is selected from the group consisting of metal nitrides and metal carbides and under the instantly claimed conditions. This deficiency in Burrell et al. is cured by the teachings of Kelly et al.

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP 2142-2143)**

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make an anti-microbial sanitary ware of Burrell with

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closed field unbalanced magnetron sputtering, as suggested by Kelly et al., and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Burrell et al. provide the concept of making antimicrobial object with magnetron sputtering and Kelly et al. teach the benefits of using the exceptional closed field unbalanced magnetron sputtering technique (See abstract and page 159, right column). Kelly et al. teach that the difference in performance between conventional magnetron and unbalanced magnetron are significant where in order to deposit dense films without introducing intrinsic stresses, a problem associated with conventional magnetrons technique, a high flux of relatively low energy ions is generally preferred and these conditions are readily provided by unbalanced magnetrons thus providing more motivation to select this technique over conventional magnetron sputtering (page 160, lower right column).

The adjustment of particular working conditions associated with closed field unbalanced magnetron sputtering such as voltage, current, temperature, pressure and sputtering time is merely routine optimization of standard working conditions in the absence of evidence to the contrary. It is the Examiner's position that it is nothing more than ordinary innovation to adjust standard parameters on the machine in the absence of evidence to the contrary. The expected predictable result is a substrate coated with an antimicrobial metal. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." And; "The results of ordinary innovation are not the subject of exclusive rights under the

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patent laws." KSR INTERNATIONAL CO. v. TELEFLEX INC. ET AL. pgs. 12, 24; 550 U. S. \_\_\_\_ (2007)".

Regarding the negative bias voltage recited in Applicants' amended claims; the bias voltage is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal bias voltage needed to achieve the desired results. Thus, absent some demonstration of unexpected results from the claimed parameters, the optimization of bias voltage would have been obvious at the time of applicant's invention.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976).

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**Response to arguments:**

Applicant asserts that a film of 100 nm is obtained with the instant method in contrast to Burrell et al. who produced a film of about 4,000 angstroms with a bias of - 100 V (see remarks, page 2). However, when one check the instant specification, the particle size is 100 nm not the film thickness (spec, page 4, line 12). Therefore, it remains unknown what, if any, differences exist between the instant invention and that which is taught in the art. Furthermore, merely changing knobs on a machine to increase or decrease the voltage is merely routine optimization by one of ordinary skill in the art. Applicant's arguments are not persuasive and the rejection is maintained.

***Conclusion***

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F (6:15 am-3:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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